

Buck Island Reef

National Park Service
U.S. Department of the
Interior

Buck Island Reef
National Monument



PUBLIC SERVICE ANNOUNCEMENT

January 26, 2004

Invasive species (plant and animal) are costing the world billions of dollars. In the United States alone, annual environmental damage and losses attributed to invasive species have been estimated at more than \$138 billion (Pimentel et al. 2000). Invasive non-native plant species displace native plant species, alter species proportions, alter nutrient and fire patterns, modify geomorphology, hydrology, and biogeochemistry, and reduce recreational use of resources. On the terrestrial portion of Buck Island Reef NM invasive non-native plant species' populations are expanding and have the potential to greatly threaten the ecological integrity of the native flora and associated fauna. A recent island-wide vascular plant inventory funded by the National Park Service recorded 8 previously undocumented non-native plants. To meet management objectives specifically "to maintain the highest possible habitat quality for the park's endangered and rare species," the park must take action to control and eradicate several non-native invasive plant species.

Nineteen out of the 228 plant species identified on Buck Island Reef are not native. Six invasive non-native species are of immediate concern:

- Guinea grass (*Urochloa maxima*)
- Tan-tan, wild tamarind (*Leucaena leucocephala*)
- Cedar or ginger Thomas (*Tecoma stans*)
- Wild pineapple, penguin (*Bromelia penguin*)
- Boerhavia (*Boerhavia erecta*)
- Aloe (*Aloe vera*)

Three species of exotics present and known to exhibit invasive characteristics in the region are:

- Genip (*Melicoccus bijugatus*)
- Haiti-haiti or seaside maho (*Thespesia populnea*)
- Painkiller or noni (*Morinda citrifolia*)

One non-native plant species with historical consideration expanding its population on the island is *Tamarindus indica* (Tamarind tree). Current management goals are to preserve in place (no treatment or removal) several old, historic individuals on the north and west sides of Buck Island. Young trees and seedlings, mostly located in a drainage gut on the north shore of the island, will be controlled and populations managed.

Of the nineteen exotic species found on Buck Island Reef only the ten listed above have exhibited invasive characteristics throughout their ranges in the southeastern U.S. and the Caribbean and are of the highest immediate concern. Their potential to disrupt the natural processes of Buck Island's tropical dry forest is high.

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NON-NATIVE INVASIVE PLANT CONTROL PROJECT

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To effectively combat non-native plant species, the National Park Service's Biological Resources Management Division (BRMD) established the Exotic Plant Management Teams (EPMT) in 2000. EPMTs are part of the long-term control of invasive plants set by the Natural Resource Challenge and contribute to individual park goals by, "containing exotic plant disturbances" (U.S. Department of Interior, 2003). They also satisfy the need for implementation of Executive Order 13112 on invasive species (February 3, 1999). Each EPMT provides a highly trained, mobile strike force of invasive plant management specialists to assist NPS units with limited resources and expertise in the control of invasive exotic plants. In 2003, the National Park Service's Florida Partnership Exotic Plant Management Team was expanded to include the Caribbean park units following the geographic boundaries of the NPS South Florida and Caribbean Inventory and Monitoring Network. In the spring of 2003, Buck Island Reef National Monument Division of Resource Management was awarded funding to begin an invasive non-native plant control and management program on Buck Island.

The immediate goals of control / management of invasive non-native plants on Buck Island are:

- Treat and manage the populations of ten invasive non-native plants found on Buck Island.
- Improve island-wide conditions for native flora and fauna including nesting habitat for endangered sea turtles and brown pelicans, threatened least terns, and rare plants.
- Ensure survival of reintroduced *lignum vitae* trees and restoration of historic landscape.
- Provide suitable habitat for re-introduction of St. Croix Ground Lizard (*Ameiva polops*).
- Increase the awareness of the public and territorial conservation agencies to potential threats from non-native plant species and environmentally sound management practices.

The initial herbicide treatment of ten (of the 19 identified) invasive non-native plant species is scheduled to commence January of 2004. Earth Balance, Inc. has been contracted to hand spray approved herbicides (Glyphosate and Triclopyr) on the targeted species island-wide under the supervision of NPS Supervisory Exotic Plant Specialist who will be the on-site Contracting Officer Representative. The ten target species will be controlled by basal treatment or foliar application of herbicide. Every effort shall be made to minimize non-target species damage during herbicide application and crew transit over the island.

- Grasses (*Urochloa maxima*) and Boerhavia (*Boerhavia erecta*): Foliar spray to wet using compression or backpack sprayer with Glyphosate in water solution at a rate of 3%.
- Woody vegetation (*Leucaena leucocephala*, *Tecoma stans*, *Melicoccus bijugatus*, *Thespesia populnea*, *Tamarindus indica* and *Morinda citrifolia*): Basally apply Triclopyr (in vegetable oil carrier) to entire stem(s) circumference above ground (between where the foliage starts and ground) at a rate of 30% (using compression or backpack sprayer).
- Aloe and wild pineapple (*Aloe vera* and *Bromelia penguini*): Apply Triclopyr (in vegetable oil carrier) at a rate of 30% to apical growth of each plant (using compression or backpack sprayer).

For further information please contact Buck Island Reef NM, Division of Resource Management, Zandy Hillis-Starr, Chief Resource Management or Daniel Clark, Supervisory Exotic Plant Specialist/Caribbean Exotic Plant Management Team at 340-773-1460.

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NON-NATIVE INVASIVE PLANT IDENTIFICATION



Aloe (*Aloe vera*)



Guinea grass (*Urochloa maxima*)



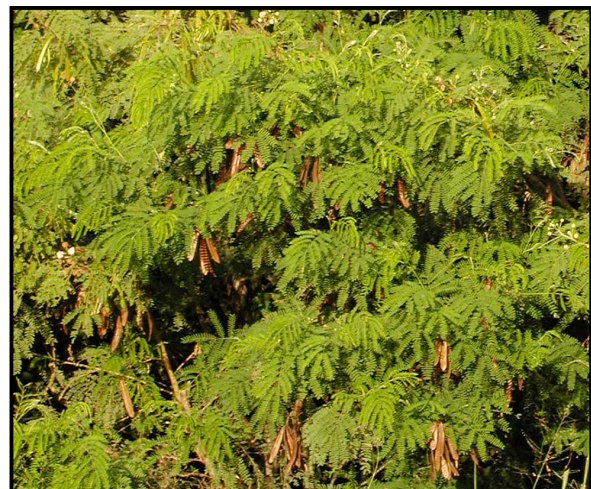
Ginger thomas (*Tecoma stans*)



Penguin (*Bromelia penguin*)



Tamarind tree (*Tamarindus indica*)



Tan tan (*Leucaena leucocephala*)